

ABSTRACT OF THE DISCLOSURE

An area is divided into regions or cells each having an associated multicast group address. The cells are organized using a quad-tree data structure that is dynamically updated. Mobile entities within a given cell elect one of their members as coordinator for assessing cost data associated with subdividing or merging the cell with other sibling cells. The coordinators communicate this cost data to a partitioning entity, which may be a central server, that computes a new partition scheme using a greedy algorithm. The new partition scheme is then broadcast to the mobile entities for use in subsequent communication. Mobile entities join multicast groups that intersect with their individual vision domains. In this way, mobile entities can acquire information from other mobile entities without the need to monitor all multicast group transmissions.